PS-6609 Outdoor Triple Technology Microwave/PIR Motion Detector
Installation Manual

INTRODUCTION

The 6609 (MW/PIR) is state-of-the-art, microcomputer controlled triplex technology outdoor intrusion detectors, for industrial, commercial and residential security. It uses double PIR and MW technologies, when combined in a single detector, complement each other to assure the most reliable detection and immunity to false alarms. The superiority of the 6609 series over other triplex detectors has been achieved by the advent of the True Motion Detection Technology algorithm. This advanced motion analysis method provides the 6609 with the ability to distinguish between the true motion of a human body and any other disturbances which invariably cause false alarms.

FEATURES

- **4-dimensional, all-in-one motion detector.**
  Two PIR sensors with opposite direction. 40 kg Pet Immunity
- **Auto Background analyse**
- **Selectable PIR detection sensitivity. Selectable Microwave detection sensitivity.**
- **Selectable detection technology combination.**
- **Memory latched input.**
- **Auto temperature compensation.**
  False alarm prevention of wind immunity and waving leafs immunity
- **Multi-directional mounting bracket PS-BK5**

Fig-1 Exploded View

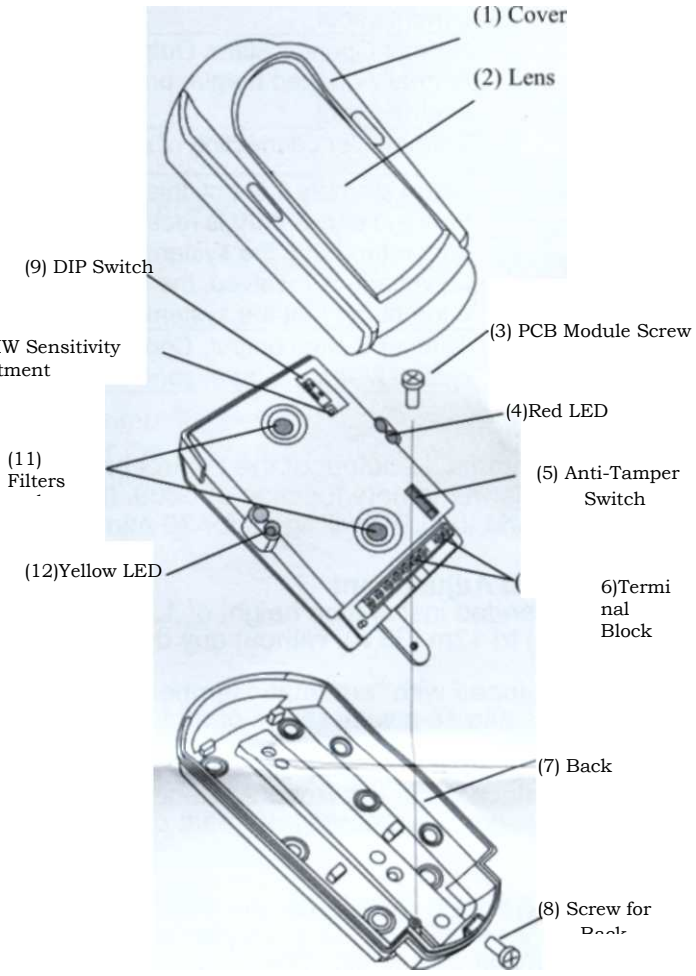
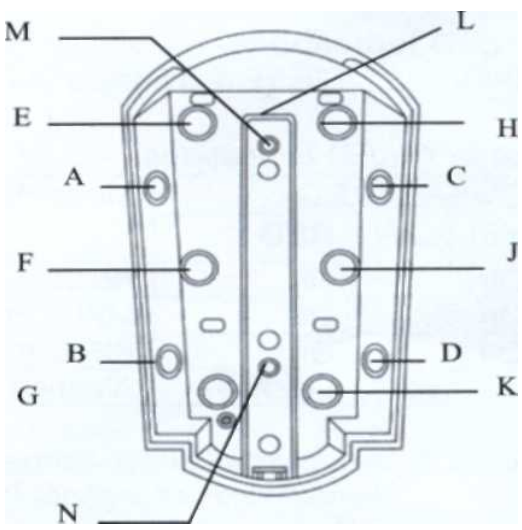


Fig-2 Back



INSTALLATION

1. Location
Installation locations should be carefully selected to avoid proximity to any of the following:
Sun shone directly, rain dipped, reflective surfaces, sources of steam/oil vapor, objects causing temperature changes such as heaters, and ovens, and infrared light sources.
Large reflecting objects (especially metals) within the coverage area can distort the microwave detector's coverage pattern. Always mount the unit on a firm and stable surface at a height that renders optimum coverage of the protected area.

2. Mounting
Select the detector installation site, based on the required coverage and recommended height of 1.8m to 2.4m. The detector comes equipped with the Posonic "no dead zone" pet immunity lens.
The unit can be installed directly on the wall using the mounting knockouts. Optional swivel brackets permit greater flexibility when adjusting the coverage area.

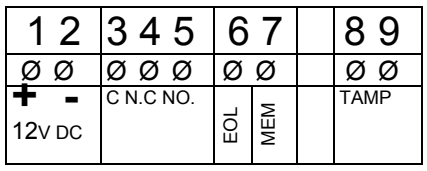
After selecting the detector's location, drill holes for the screws as per figure 2. Holes A, B, C and D are to be used for corner mounts. For a corner mount, the PCB can be carefully removed by loosening the PCB screw. In the case of flat surface installation, utilize holes M and N. Run the wires through entry holes L and connect them according to the marking on the PCB or FTG-3.

For swivel bracket mounting, utilizes hole E, F, G, H, J and K to fix to the bracket. The angle of bracket can be adjusted down 0-30º and left/right 0-90º in order to get a good coverage area.

3. **Wiring**

12 V(+) and(-)	Connect to a power source within the range of 9 to 16 VDC. Take care not to reverse the polarity.
N.C. and C	Normal Closed Alarm Output, Connect to normally closed burglar protection zones of the control panel.
N.O. and C	Normal Opened Alarm Output, Connect to normally opened burglar protection zones of the control panel.
EOL	Terminal for connection of a EOL resistor.
MEM	Alarm Memory Control, this point receives signal from the panel. If 0V is received, the detector will understand that the system is armed. If 12V or no voltage is received, the detector will understand that the system is disarmed.
TAMP	Tamper Switch output, Connect to a normally closed 24-hour tamper zone of the control panel.

Fig-3
Terrminal Block Wiring



4. Alarm Memory
Using the programmable output of the control panel to generate (-12V) to the terminal "MEM" of 6609 upon arming will trigger the alarm memory function of 6609. If the detector is alarmed during armed period, the alarm signal will be memorized and the LED will lights for 30 minutes when the panel is disarmed (delete -12V).

5. Coverage and Adjustment
At the recommended installation height of 1.8m (5.8 ft) to 2.4m (7.8 ft), from the PS-6609 will provide full coverage 1.2m (4 ft) to 12m (39 ft), without any dead zones.

Your unit is equipped with "automatic temperature compensation", which adjusts amplifier gain to maintain coverage levels across a wide range of temperatures.

Any mounting height should be followed by a walk-test of the protected area. Walk-testing verifies that the required coverage is in place. With the Posonic standard lens, there should be no dead zones in tne protected area. When walk-testing, always move across the path of detection, not toward the detector.

6. Power on
After connecting the power source, the 6609 starts a 90-seconds warm-up period, indicated by alternate flashing of both red and green LEDs. If the alternate flashing of the LEDs do not stop within 90 seconds, a failure has been detected by the self-test circuit. Then the Green LEDs blink rapidly indicating that the detector is starting the background analysis. Once the analysis completed, the Green LbDs blink again for 5 seconds. The detector is ready to work now.

INDICATION AND SETTING

1. LED Indications
The three LEDs (Fig. 1) are used to signal various alarm and trouble messages as shown in Table 1 below:

Table 1. LED Indications

Status of LEDs		Meaning
YELLOW	RED	
Off	Off	No detection
On	Off	MW is triggered
Off	On	PIR is triggered
Flashes	Flashes	Alarmed

Notes: 1. During walk testing, normally the first LED to illuminate is the yellow one (MW detection), depending on which one of the two kinds of sensors (MW and PIR) discovered the motion first. Upon subsequent discovery of the motion by the PIR sensor, the yellow and red LED will flash (alarm).
2. If the yellow or red LEDs do not illuminate during walk test, a malfunction has been diagnosed. Replace the unit without delay.

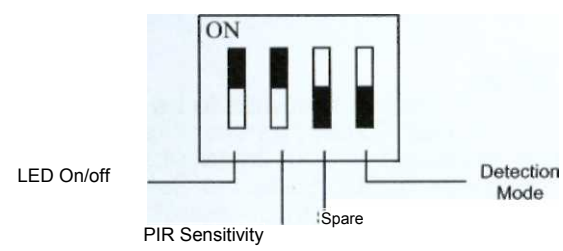
2. Mode Setting

The mode setting DIP Switch is mounted on the detector's PCB board (see Fig. 1). It controls four functions as demonstrated in Fig. 6 and as detailed in Table 2.

Table 2. Mode Setting DIP Switch

Switch	Setting	Function	Default Setting
SW-1	ON	All LEDs are enable	ON
	OFF	All LEDs are disable	
SW-2	ON	PIR sensitivity is high	ON
	OFF	PIR sensitivity is low	
SW-3		Spare	OFF
SW-4	ON	Only Microwave	OFF
	OFF	Microwave and PIR	

Fig-4
DIP Switch Mode Selector



ADJUSTMENT AND TEST

1. Setting the PIR Pulse Count

If you wish to set the PIR detector for maximum false alarm immunity, shift DIP switch 2 (SW-2) to OFF. In this position, two consecutive motion pulses are required to trigger the PIR detection. For faster catch performance, shift SW-2 to ON. In this position, only one motion pulse is required to trigger the PIR detection.

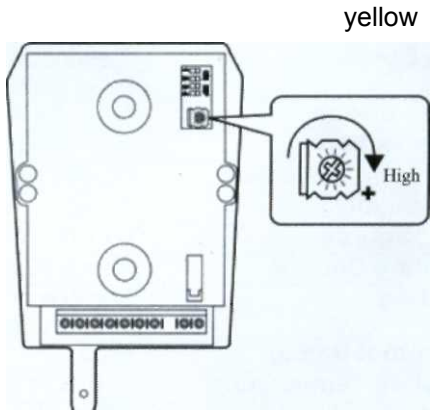
2. PIR Walk Test

A. Rotate the MW sensitivity adjust all the way towards minimum (turn the adjust anti-clockwise).
B. Verify that DIP switch SW-1 is set to ON (the red walk-test LED is enabled).
C. Mount the front cover in place.
D. Walk into the detector's field of view at the expected far edge of the coverage area. The red LED should illuminate for up to 3 seconds each time your motion is detected.

3. **MW Walk Test**

A. Remove the front cover.
B. Verify that the MW sensitivity adjust is set to minimum (turn the adjust anti-clockwise) and DIP switch SW-1 is set to ON (the walk-test LED is enabled).
C. Start by moving into the coverage area at the far edge. The yellow LED should light steadily for up to 3 seconds each time your motion is detected.
D. IT your motion was not detected at the far edge of the coverage area, advance the MW adjust slightly toward maximum(clockwise) and try again until your motion is detected reliably at the far edge. The sensitivity can be adjusted between 25% to 100% (6-24m)
Caution! *The MW detection range must not exceed the far edge of the desired coverage area, otherwise* it will detect movement from outside the walls of the protected area and causes false alarm.
E. Walk across the coverage area at various ranges and verify that your motion is consistently detected.
Note: *If PIR trips interfere with your test, disable the PIR by inserting a small piece of cardboard in front of the sensor.*

Fig-5
Microwave Sensitiv ity



4 Alarm Walk Test

A. Set DIP switches SW-1 to ON (all LEDs are enabled).
B. Install the front cover in place.
C. Walk across the detector's field of view in different directions, at various distances from the detector, and verify proper detection throughout the detector's coverage area (the yellow and red LED will flash for 3 seconds).
D. When done, remove the cover and set DIP switch SW-1 OFF to prevent unauthorized people from tracing the coverage pattern.
E. Remount the cover and fasten it to the base using a screw at the bottom.

PET IMMUNITY

The 6609 has two dual opposite element sensors for of 3-D space detection. In addition it combines with the proprietary Pet-friendly lens greatly decrease false alarms created by pets. In order to generate an alarm, an object must cross the beams created by both the lower and upper sensor.
Due to the small height and volume of a pet, they will not generate the required signal value normally recognized as an alarm situation. Any PCB adjustments should be followed by a walk-test of the protected area. Walk-testing verifies that the required coverage is in place.

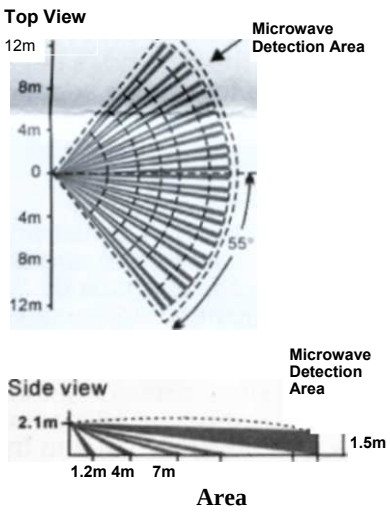
WARRANTY

The Seller warrants its products to be free from defects in materials and workmanship under normal use for a period of one year. Except as specifically stated herein, all express or implied warranties whatsoever, statutory or otherwise, including without limitation, any implied warranty of merchantability and fitness for a particular purpose, are expressly excluded. Since the Seller does not install or connect the products and because the products may be used in conjunction with products not manufactured by Seller. Seller cannot guarantee the performance of the security system. Seller obligation and liability under this warranty is expressly limited to repairing or replacing, at Seller's option, any product not meeting the specifications. In no event shall the Seller be liable to the buyer or any other person for any loss or damages whether direct or indirect or consequential or incidental, including without limitation, any damages for lost profits stolen goods, or claims by any other party, caused by defective goods or otherwise arising from the improper, incorrect or otherwise faulty installation or use of the merchandise sold.

Infrared and Microwave Detection

SPECIFICATIONS

PIR Sensors	Two Low noise dual-element pyroelectric sensor
PIR Trigger Indication	Red LED illuminates for up to 3 seconds
Pulse Count	Selectable, 1 or 2 pulse count
Lens	34 beams, 110° field of view
Coverage	12m x 110°
Microwave Oscillator	DRO-stabilized type
Microwave Frequency	10.525 GHz
Microwave Range	Adjustable from 25% to 100% (6 m to 24 m)
ivivv i rigger indication Alarm Indication	YG low LED illuminates for up to 3 **seconds** Red and Yellow LEDs flashes for 2-3 seconds
Alarm Output	Normally closed and normal opened, 0.1 A resistive / 30 VDC; 30ohms resistor in series with contacts
Alarm Duration	3 seconds (red and yellow LED flash and output relay contacts trigger)
Tamper Switch	N.C, 50 mA resistive /30 VDC
RFI Protection	>30 V/m (20 MHz to 1000 MHz)
White Light Protection	50,000 lux
Pet Immunity	40 kg
Power Source	9 to 16 VDC
Operating Current	About 40 mA @ 12 VDC
Mounting	Surface or corner (without brackets), from 1.8 m to 2.4m high
Waterproof Rating	IP65
Operating Temperature	-10°C to 50°C
Dimensions (H x W x D)	168 x 95x65 mm
Net Weight	203g



Area